

LEAFHOPPERS OF MT. MARCY AND MT. MACINTYRE,  
ESSEX CO., NEW YORK (HOMOPTERA,  
CICADELLIDÆ)

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Mt. Marcy and Mt. MacIntyre, with respective altitudes of 5344 and 5112 feet, are the highest mountains of the Adirondacks. In fact Mt. Marcy is one of the three highest mountains in eastern North America, Mt. Mitchell in the Southern Appalachians with an altitude of 6711 feet, and Mt. Washington of the White Mountains with an altitude of 6279 feet, being the other two. On the summit of each of these Adirondack peaks there is much vegetation consisting of plants which are distinctly alpine and which form a habitat of considerable interest to the entomologist. Twenty-three distinctly alpine species of plants are recorded\* from the summit of Mt. Marcy and about as many occur on Mt. MacIntyre. The following are characteristic species found on both mountains: bearberry willow (*Salix Uva-ursi*), glandular birch (*Betula glandulosa*), black crowberry (*Empetrum nigrum*), Diapensia (*Diapensia lapponica*), Lapland rose-bay (*Rhododendron lapponicum*), Cutler's alpine goldenrod (*Solidago Cutleri*), low rattlesnake root (*Nabalus nanus*), and bog bilberry (*Vaccinium uliginosum*). Besides these there are several species which may be either alpine or encroachments from the lower altitudes and there are many which are definitely plants of lower altitudes that have become established here. On Mt. MacIntyre especially there is much sphagnum, Labrador tea, and other characteristic bog plants. Many of the depressions of these summits are filled with a scrubby growth of black spruce (*Picea mariana*), glandular birch (*Betula glandulosa*), and balsam (*Abies balsamea*). The bearberry willow (*Salix Uva-ursi*) and the bog bilberry (*Vaccinium uliginosum*) are very plentiful, forming dense beds of shrubs.

\* Plants and Animals of Mount Marcy, New York, by C. C. Adams, G. P. Burns, T. L. Hankinson, B. Moore, and N. Taylor. Ecology, vol. 1, no. 2, p. 71-94; no. 3, p. 204-233; no. 4, p. 274-288, 1920.

The climate is rather severe at these altitudes. It is said that Marcy is hardly more than two months without snow and it is likely that this applies to MacIntyre also. In the paper by Adams previously referred to it is stated that the growing season around Marcy's summit averages about ninety-two days. The latest frost reported is July 20 and the earliest, August 18, not in the same year. Little accurate information is available concerning temperatures but from personal observations it can be said that it is nearly always cool and sometimes very cold during the collecting season for leafhoppers. The strong winds and high precipitation often make sweeping with an insect net difficult and the generally low temperatures do not make collecting any easier.

Except for a few families of flies, leafhoppers seem to be the most abundantly represented group of insects. Eighteen species of this family were collected from the summit of Marcy and thirteen species from MacIntyre. Besides these, *Deltocephalus sayi* is reported from Mt. Marcy by Adams but was not collected by the writer. The collections were made from Marcy on August 20, 1930, and from MacIntyre on July 26, 1930. Because of weather conditions the collecting on MacIntyre was not so extensive as on Marcy. Both collections were made around the summit distinctly above the so-called timber line. Two attempts have been made to collect leafhoppers on MacIntyre in early June but snow and strong winds at the summit made it impossible each time.

#### LEAFHOPPERS FROM MT. MARCY

1. *Idiocerus suturalis* var. *suturalis* Fitch. 3 specimens.
2. *Draeculacephala mollipes* (Say). 1 specimen.
3. \**Deltocephalus apicatus* Osb. 1 specimen.
4. *Deltocephalus inimicus* (Say). 1 specimen.
5. *Deltocephalus melsheimerii* (Fitch). 1 specimen.
6. *Deltocephalus sayi* (Fitch). Not collected but reported from Mt. Marcy by Adams.

\* Several of the subgenera of *Deltocephalus* have been given generic rank by DeLong and Slesman, Ann. Ent. Soc. Amer., vol. 22, no. 1, p. 81-114, 1929.

7. *Thamnotettix stramineus* S. & De L. 1 specimen. Not previously recorded from New York. Also collected in vicinity of Canton, N. Y.
8. *Cicadula sexnotata* (Fall.). Many specimens. Very abundant.
9. *Balclutha punctata* (Thunb.). 1 specimen.
10. *Balclutha impicta* (Van D.). 4 specimens.
11. *Eugnathodus abdominalis* (Van D.). 1 specimen.
12. *Empoasca fabæ* (Harr.). Many specimens.
13. *Deltocephalus misellus* Ball. 4 specimens. Previously reported from high elevations and apparently a northern species.
14. *Deltocephalus striatus* (L.). 1 specimen. Reported under *D. affinis* from Mt. Marcy by Adams. Reported from Alaska as well as from many parts of the United States and Canada.
15. *Ophiola angustata* (Osborne). 4 specimens. Described from Mt. Katahdin, Me., at elevations up to 4700 feet. Also reported from low ground at Cranberry Lake, N. Y.
16. *Ophiola arctostaphyli* (Ball). Many specimens. Very abundant. Described from high altitudes (7000-9000 feet) in Colorado, collected on bearberry (*Arctostaphylos Uva-ursi*). Reported from mountains in Maine (4700-5000 feet) and from Mt. Washington, N. H. A definitely alpine species.
17. *Ophiola cornicula* (Marsh.). 1 specimen. Reported from mountains in Maine. Also occurs in low places. Probably feeds on heath plants.
18. *Ophiola osborni* Ball. 2 specimens. Reported from dry uplands in northeastern United States.
19. *Cicadula slossoni* Van D. 3 specimens. Reported from Mt. Katahdin, Me., at 4500-5300 feet and from Mt. Washington, N. H. It also occurs in other situations.

## LEAFHOPPERS FROM MT. MACINTYRE

1. *Agallia sanguinolenta* (Prov.). 1 specimen.
2. *Oncopsis pruni* (Prov.). Many specimens. Very abundant. Also collected on the MacIntyre trail from yellow

- birch (*Betula alba* var. *cordifolia*). Reported from Mt. Katahdin, Me., at 4500 feet. A widely distributed species.
3. *Deltocephalus acus* S. & De L. 1 specimen.
  4. *Deltocephalus inimicus* (Say). 1 specimen.
  5. *Deltocephalus melsheimerii* (Fitch). 1 specimen.
  6. *Deltocephalus pascuellus* (Fall.). 2 specimens.
  7. *Dikraneura fieberi* (Loew). 4 specimens.
  8. *Deltocephalus paludosus* Ball. 3 specimens. Previously reported only from Colorado. Possibly an alpine species.
  9. *Deltocephalus misellus* Ball. 5 specimens.
  10. *Ophiola angustata* (Osborne). 6 specimens.
  11. *Ophiola arctostaphyli* (Ball). Many specimens, both nymphs and adults. Very abundant.
  12. *Ophiola osborni* Ball. 1 specimen.
  13. *Cicadula slossoni* Van D. Many specimens. Very abundant.

In addition to the above named species many specimens of the genus *Typhlocyba* were collected from both mountain tops and along the trail up Mt. MacIntyre. All but one of these are females; hence their identity is uncertain. None of them has color markings on the cross veins, a feature generally characteristic of *T. gillettei* Van D. The male, however, although it has no color markings above, has the genitalia of *T. gillettei* and has been so identified by W. L. McAtee. This is a widely distributed species.

The purpose of this study is two-fold: first, to find out what species of leafhoppers live on the summits of these mountains; and second, to learn whether any of these species are limited in their distribution to the tops of high mountains. The list of species answers the first question, although undoubtedly more names will be added to this list as more collecting is done.

In answering the second question one must take into consideration the fact that many leafhoppers living in the surrounding lower altitudes may gradually make their way up the mountain, possibly aided by strong winds. Some of these species have been able to breed here while others have been unable to withstand the severe conditions and are represented only by stray individuals. To this category of species that have a wide distribu-

tion or are more commonly found at lower altitudes belong the first twelve of the Marcy list and the first seven of the MacIntyre list. Of these *Cicadula sexnotata* seems to be well established and without doubt breeds on Mt. Marcy, while *Oncopsis pruni* is certainly well established on Mt. MacIntyre and was collected in numbers from yellow birch (*Betula alba* var. *cordifolia*) along the trail up this mountain.

For a few species the environment on mountain tops is a natural one either because of suitable temperatures or because their host plants, generally bog species, grow abundantly in these places. The remaining species of both lists (13-19 from Marcy and 8-13 from MacIntyre) may be considered as belonging to this group since all of them have been recorded previously from mountain tops or places having a fair altitude. Most of them, however, have also been collected from lower regions. This is especially true of species which feed on bog plants. *Ophiola arctostaphyli* is the most abundant species of leafhopper on these summits and is the most definitely alpine form. *Deltocephalus paludosus* may possibly be a definitely alpine form also. It has been recorded heretofore only from Colorado.